## Scientific Abstract (Tab 1)

**Background:**

Coronary artery disease (CAD) is the leading cause of mortality in the United States. The major morbidity from coronary artery disease is a result of obstructive coronary artery narrowing and resultant myocardial ischemia. Therapeutic interventions for CAD include behavioral and dietary modification; vasodilators, ß-blockers, lipid-lowering, and anti-platelet medications; and invasive procedures such as coronary artery bypass grafting (CABG) and percutaneous transluminal coronary angioplasty (PTCA). Although medical and surigical treatments can often provide adequate short-term treatment for individuals with CAD, an ongoing and increasing need exists to develop therapeutic modalities for those patients with angina inadequately responsive to medical therapy, who have serious coronary atherosclerosis, and who are not eligible for percutaneous techniques or bypass surgery.

The premise of this project is to use therapeutic angiogenesis as an intervention to treat or prevent a pathological clinical situation characterized by local perfusion by stimulating or inducing collateral development. *In vivo* gene therapy relies on a vector to introduce the gene into the cell. Vectors currently in use include plasmid/liposome complexes, adeno-associated viruses, adenoviruses, and retroviruses. CI-1023 comprises a replication-deficient adenovirus vector. The adenovirus provides high gene transfer efficiency, with an epichromosomal location in the cell. This location reduces the chances of native DNA mutation and limits gene expression.

The Biosense® Integrated Intramyocardial Injection System will be used to deliver CI-1023 at prespecified locations within the left ventricle (LV). Catheter-based intramyocardial injection into the LV is hypothesized to provide a less invasive, percutaneous method of delivering angiogenic factors.

**Purpose and Evaluation:**

The primary objective of this randomized, double-blind, placebo-controlled, multicenter, pilot study is to investigate the tolerability and feasibility of administering CI-1023 using the Biosense® Integrated Intramyocardial Injection Device to patients with chronic, severe angina pectoris and advanced CAD who have no foreseeable revascularization options. This study will enroll 12 patients at up to four (4) clinical sites. The primary endpoint will occur at twelve (12) weeks post procedure. The same array of tests and procedures that were performed at the "baseline" time point will be repeated at the "week12" time point for complete comparison evaluation.